AVRO News

JANUARY 1950

JANUARY 1950 No. 20

AVRO News

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COMMENT

Avro News starts the new year much larger in size. We hope we can keep up our reputation for quality and yet at the same time not sacrifice our new quantity. How about those contributions you have been intending to send in?

Last month's issue aroused considerable favorable comment. Our readers particularly liked the artwork and the new topical arrangement of departmental news. The Toronto Star's Over the Tea Cups column used a couple of our items but unfortunately did not credit us. Several trade magazines expressed interest in our lead article on jet engine manufacturing and we may see the material appearing in expanded and altered form in their columns.

To encourage contributions to our magazine we intend to offer a prize of $5.00 for the best one submitted in any genre (article, gossip item, cartoon, idea or what-have-you) each month. Editorial masthead staff are excepted as prize-winners but the reporters should be very much elegible. We will try to take everything possible into consideration in making the award - originality, suitability, etc.

COVER

Some hitherto unpublished photographs of our CF-100 jet fighter as it undergoes engine tests and taxi trials make up our cover.

Editorial

TOWARDS THE JET AGE

We have seen the realization of three Avro Canada contributions to the Jet Age - the Jetliner, the CF-100 fighter and the Orenda turbojet engine. This year will see their demonstration and testing for their ultimate customers, the public and the airforce.

All of us are convinced that jet power is the greatest development in transportation since the discovery of steam. To a certain extent we can expect the same sales resistance to our products that the advocates of the horseless carriage met. Progress, however, in the way of the increased speed, safety, economy and regularity brought by jet flight will prevail. We know that these contributions to jet flight further international understanding by enabling more and more people to get together and understand each other.

Our task ahead is not an easy one but we know it will be easier because we will carry it out with the team spirit built up by Avro Canada. We all take a personal interest in our products. (Remember how we all held our breaths until Jimmy Orrell, good old Jimmy, brought "our" Jetliner in safely on its wheels-up landing last summer). We have worked together, all of us, to produce these aeronautical achievements. Let us go on and prove their worth to others.

This year will be another great one for Avro Canada. Your plant magazine staff consider themselves fortunate to be in the position to record these achievements.

AVRO CANADA Looks Ahead

Fred T. Smye ASSISTANT GENERAL MANAGER

This year Avro Canada will devote itself to preparations for producing Orenda jet engines and CF-100 fighters, test-flying and selling the Jetliner and overhauling and converting aircraft for the RCAF. We intend to build on the achievements already established by the company.

As you know, achievements to date include the successful running of the Orenda, the successful flying of the Jetliner and at the time of writing we are very close to the first flight of the CF-100 fighter.

During 1949 both the Orenda and the Jetliner had extensive tests and both measured up to or surpassed our expectations. We can justifiably feel with modest pride that the Orenda is one of the best gas turbine engines in the world at its particular stage of development and that the Jetliner has established world leadership in its class as a commercial air transport.

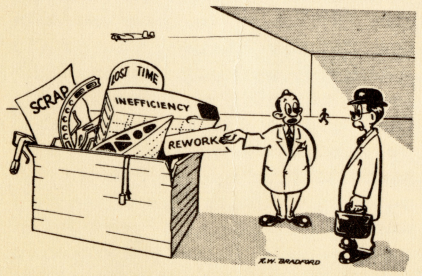
With limited pre-production contracts for the Orenda and the CF-100 fighter, we are now busily engaged in tooling and in all other respects preparing for their production. We have reasonable assurances that there will be further production contracts soon if the CF-100 proves successful and if its performance comes up to its design specification.

In 1950 more of our energy will be devoted to production of Orendas and CF-100 fighters - or more specifically to the plans and preparation for their production and delivery. There will be substantial plant rearrangement, including the establishment of a production layout for the CF-100 and a production shop for the Orenda, now beginning to take form in the 1st bay of the Aircraft Assembly building. Most of the tool designing and tooling for both engine and fighter should be completed during the year. Materials, bought-out parts and equipment will be purchased and a substantial amount of work should be in progress so that our products can come off the line in early 1951. In fact

the first of the production fighters are scheduled for completion during the latter half of 1950.

As far as the Jetliner is concerned, this year will be devoted to extensive test flights, the construction of the second aircraft and a concentrated sales effort. While the design and development of a prototype is a very important phase of any aircraft program, and this particular stage of the Jetliner has been well and ably accomplished, it is almost equally important to sell our product in the very competitive market of air transportation. Assuming our sales effort is successful, it is also important that we produce the aircraft at a competitive price and ensure that it performs an efficient and useful service to the traveling public. Unless and until all of these functions have been satisfactorily accomplished, the Avro Jetliner project is not an unqualified success.

Although the Jetliner, CF-100 fighter and Orenda engine activities are always foremost in our minds and are frequently brought to the public's attention in the press, we must not forget the extensive and important aircraft overhaul and conversion work which the company is carrying out. Sometimes referred to as the "bread and butter" work, this represents actual completed sales.



OF COURSE, YOU HAVE TO BUY THIS TOO!

Aircraft which have been overhauled and converted by Avro Canada are carrying out very useful service for the RCAF throughout Canada. The overhaul and conversion work will probably be carried out at about the same rate next year and in the future this work will be increased. The company's policy is to overhaul and carry out conversion work on its own products, both aircraft and gas turbines.

By our efforts during the last four years we have gained world-wide recognition for the company and for our country in the field of aviation. We have demonstrated that we are world leaders in the design and development of jet aircraft and engines. We have made a commendable start but we must all realize that we have a long way to go to bring even our existing projects to a successful conclusion - that is when they are performing a useful and efficient service for our customers. We must continue our good record and resolve that we are going to "deliver the goods". Only thus will we ensure the successful operation of Avro Canada and the future well-being of ourselves as employees.

Reconverted Avro Canada Lancasters are probably the most-travelled aircraft in the world. Pack-horses of the RCAF Photographic squadrons, they were responsible last year with Dakotas and Mitchells for photographing a total area of 859,000 square miles of Canadian soil, the majority of it terrain almost impossible to map otherwise.

It was at Malton that these Lancasters were made for wartime uses, in some cases by the same hands which reconverted them. Standard heavy bomber of the RCAF and RAF, the Lancaster was produced in quantity by Victory Aircraft, predecessor of Avro Canada. About 430 were produced at Malton. Seven were reconverted for photographic work and two are now being reconverted.

Each year these giant long-range aircraft drone the length and breadth of the country carrying out their mammoth task. Coverage of Canada by aerial photography began in 1921, and that year 280 square miles were mapped. The work was gradually stepped up, as improved aircraft such as the Lancaster and equipment such as last-war radar was brought to use. The 1948 operations saw an all-time record achieved, the photo aircraft returning to their Rockcliffe home base after 911,000 square miles was covered. Last year bad weather prevented an overall record being set. The photo planes did, however, establish one record in 1949, that for amount of vertical photography done. This fall and winter the Lancasters came home to Avro Canada for reconditioning before what they intend to be a record season in 1950.

In addition to providing maps of vital military importance, the aerial photos taken are used in many important ways commercially, and play a big part in the development of our natural resources, from developing water power to exploring mineral possibilities. From them, agricultural experts are able to obtain much valuable information and foresters accurately estimate the cordage of wooded areas. Towns are planned and floods controlled

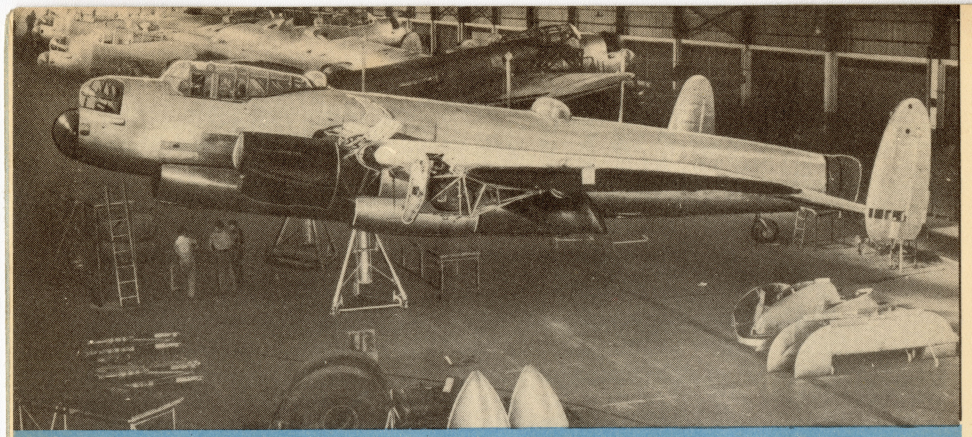


PHOTO LANCS ON OUR ASSEMBLY LINE

by their aid. The photos themselves are taken in strips, each individual picture overlapping the one next to it, allowing them to be viewed in pairs through a stereoscope. By this means, used widely during the war to bring out hidden enemy positions, an unbelievable amount of detail is revealed.

The first Lancasters normally leave Rockcliffe sometime in April, as soon as weather conditions permit, and the season generally ends about the middle of October. The photo operations provide a constant battle between the aircraft and their crews and the weather because areas to be photographed in most cases must be free from ice and snow. The retreating winter season is followed closely northward, photography being done as soon as the snow and ice melt. It is not unusual in certain regions to find only a few days during the entire season suitable for photo operations. To obtain coverage the RCAF must be on the spot, ready to fly 15 or 20 hours a day, while conditions remain good. This feat is made possible by near 24-hour daylight during the summer months.

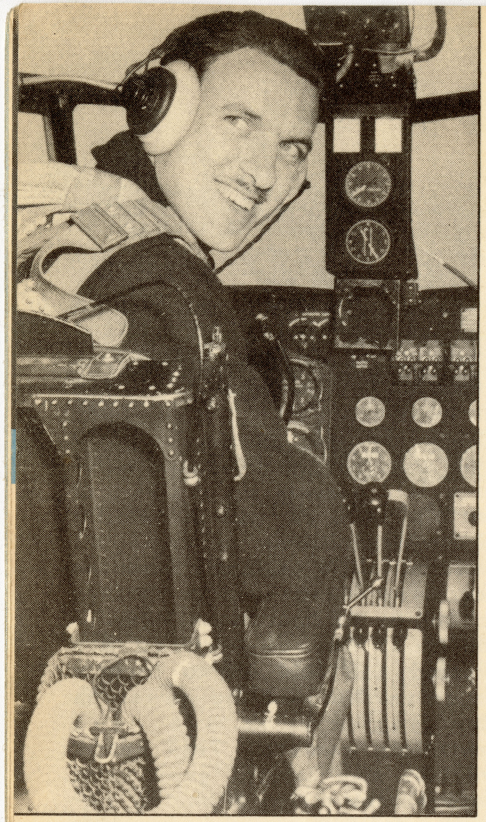
The RCAF is presently working on Shoran-controlled survey, a method of establishing necessary ground position points for fixing aerial photos into the map by means of radar, in place of flying in ground parties to take astronomical fixes. In the past, ground surveyors from the Department of Mines and Resources have been flown into unsurveyed areas to establish accurate ground positions for this purpose. Use of ground radar beacons, together with airborne radar equipment, enables aerial photos to be positioned without this ground work. A network of such radar beacon sites for this purpose has been set up in Manitoba and Saskatchewan and is being used by the RCAF, and it is expected that the network will be extended to other parts of the country. Future operations will determine to what extent this method may displace actual ground survey work.

While the photo aircraft are spread from coast to coast, and from the southern border to the Arctic Islands throughout the photo season, the nerve centre for the work remains the Operations Room at Rockcliffe, where the areas being covered are carefully plotted. From the "Ops" room flash out wireless signals shifting detachments from one location to another, as work is finished at the various points, or as changing weather conditions reveal opportunities to get a difficult spot covered before conditions alter.

Film exposed in the field by the photo planes is rushed back to Rockcliffe. Possessing one of the world's finest and most modern aerial photographic laboratories, Rockcliffe is renowned throughout the photographic world, attracting many visitors from abroad. The exposed film arrives at Rockcliffe in 450-foot rolls, accompanied by a full report listing the area covered, weather conditions at the time the film was taken, height and speed of aircraft, and other details. The film is put through continuous processing machines for development, and is turned out at the rate of five feet a minute. The negatives then go to the annotating tables, the tops of which are glass, with strong lights underneath. Here the film is given an initial check by skilled airmen and NCO's for accuracy and quality, and each negative is marked with a number, to allow instant identification. Possible gaps in the area being covered, caused by camera failures or lack of forward overlap, are spotted at this stage. Highly skilled personnel are required to ascertain quickly the cause of certain failures, and the ability of the technicians to analyse camera faults instantly from the negatives results in large savings in time to the operational units in the field. The negatives are printed and laid out to form a rough mosaic, and the mosaic is photographed by an overhead travelling camera. This shows whether any lateral gaps exist between the strips of photos, resulting from errors in navigation on the part of the photo aircraft. If so, the detachment concerned is immediately notified, in order that they may correct the fault.

Much of the work is done in the North, but the RCAF does not restrict its photo operations to

COLLATING THE MAP PHOTOGRAPHS



OUR DON ROGERS CHECKS OUT ANOTHER LANC

that region. In 1945 New Brunswick was photographed, and one of the 1947 projects covered a large part of British Columbia, along the Columbia River. Both the 1948 and 1949 seasons saw considerable coverage close to the southern border.

It is in the Far North, however, that the aerial photos reveal startling inaccuracies in existing maps. In 1934, for instance, it was discovered from such photos that Akimiski Island in James Bay was practically upside down on all maps. In another case a hamlet was found to be several miles from its proper location, and in 1947 a photo aircraft rediscovered the "lost" Spicer Islands in Foxe Basin, to the north of Hudson Bay. An outstanding example came in 1948, when a photo survey crew flying one of the big four-engine Lancasters discovered two uncharted islands in Foxe Basin, having a total area of more than 5500 square miles.

Coverage of Canada by means of tri-camera photography, providing a basis for the production of small scale maps and aerial charts in which detail is not required, may be completed within several years. Vertical photograph, used for detailed mapping and analysis, will take longer and may prove a continuing task. Changing physical conditions of the various regions require new vertical photos, and old pictures become unusable.

It is anticipated that when the Canadian North has been accurately mapped, our national income will be increased by many millions of dollars annually. There is probably at least as much natural wealth in the unexplored parts of this country as in all the other sections combined.

The mapping work is of international importance for it is recognized that the air routes of the future between the old world and the new will pass over Canada. We hope and pray that these northern air routes will be used for peaceful commerce but if they are used for war the mapping being carried out by Avro Canada Lancasters will be of equal importance.

MARTIN-BAKER HOTSEAT

Boyd Ferris

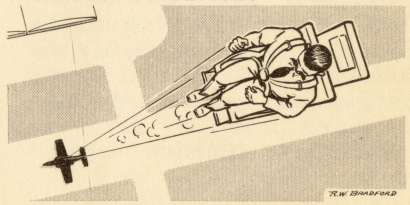
Bailing out of a plane is never a very happy pastime but at moderately high speeds the prospect becomes even less inviting. At these speeds the airstream tries to wrap you around the tailplane - if it lets you out of the cockpit at all.

One of the most practical solutions to the problem has come with development of the Martin-Baker ejection seat in England. This seat, carrying its own parachute, is mounted in the cockpit on rails and can be shot into the air carrying its occupant with it.

So that too great initial loads will not be imposed on the sitter's body the seat is projected by two cartridges fired one after the other. An ingenious arrangement ensures that the pilot's body is in the best position to take the shock: to fire the cartridges he reaches up with both hands and pulls a blind down over his face, the action forcing his head back and leaving his arms in a safe position. Moreover the blind protects his face from the airstream.

Any of you who have had experience in making hurried exits know how little you want to be bothered with details at such times. The pilot is no exception. Normally attached to his plane by various connections for radio, oxygen, flying suit, etc., he can't just pick up and go until he has disconnected himself. To ease the pilot's mind this disconnecting has been made fully automatic. Once he has jettisoned the cockpit canopy he need only pull down the blind and everything takes care of itself; even the seat parachute is opened for him once he has cleared the plane.

This type of equipment has become standard in most high-speed fighters and in fact is being used in Avro Canada's new jet fighter. And although there is some danger of confusing it with the old circus act of being shot out of a cannon, most pilots seem willing to risk that confusion.



DAMN! WRONG BUTTON!

AS OTHERS SEE US

The world had its first look at its most powerful and most recent jet fighter - the CF-100, last month when Avro Canada photographs were released simultaneously by us from our plant and by our representative in London, England; by the RCAF in Ottawa; and by various Canadian diplomatic missions abroad... The Society of British Aircraft Constructors report that Avro Canada was building another jet transport was carried by many newspapers.

Magazine articles on the Jetliner appeared in the United Kingdom "Meccano Magazine"; Danish "Folk og Faern"; Netherlands "Vliegwereld"; in "Shell Aviation News"; and in the "Northern Circuit," organ of the Northern Electric Company. An article on the same subject appeared in the "Aeronautical Engineering Review," whose cover picture showed our Mr. Walter Deisher addressing the official flight crowd with the Jetliner dangerously close overhead. The speech must have been a good one for nobody was paying any attention to the aircraft. As you probably guessed, the Jetliner was faked in, otherwise everybody would have been under their seats.

The "Royal Aeronautical Society Journal" featured in its November issue our Mr. E.H. Atkin's fifth Commonwealth lecture to the Society last September in London on jet aircraft.

Clippings are still coming in from all over the world on the Jetliner's speed run of more than 500 m.p.h. in November. We are also getting quite a few clippings on the endurance run of the Orenda. Incidentally "Flight" carried an article on the Orenda last month.

Avro Canada was mentioned although not as prominently as we might be in Magazine Digest's article, "Britain Wins the Jet Race."

Such equipment suppliers for the Avro Jetliner as the Janitrol combustion heater and Dowty undercarriages are beginning to advertise their connection with our jet transport.

Earlier in the month the arrival of Bill Waterton to test fly the CF-100 aroused much press interest. You may have heard him being interviewed over the radio several times. The interview on CBC News Round-up went all over the English-speaking world by courtesy of the CBC International Service. The CBC rebroadcast from the United Kingdom carried an excellent account of the CF-100 fighter when it started taxi trials.

DEPARTMENTAL NEWS

REPORTERS

JOE BEST	SECURITY	JUNE MOASE	RECREATION CLUB
ELEANOR DAVIE	ACCOUNTING	PAUL NIELSON	NOBEL
KAY LUFF	SALES & SERVICE	ARNOLD RICHARDS	GAS TURBINE PRODUCTION
HARRY MACDOUGALL	AIRCRAFT DESIGN	GEORGE TIMPSON	CONVERSION & OVERHAUL
ISABELLE McGARVEY	PROCUREMENT & MATERIAL CONTROL	GEORGE VALE	GAS TURBINE DESIGN
ELIZABETH McGRATH	GAS TURBINE EXPERIMENTAL SHOP	NORM WOOTTON	AIRFRAME MANUFACTURING

NO SPY HERE

We are getting an increasing number of requests for photographs and background material on our products from various people around the world. We think twice, of course, before sending out anything to dubious addresses. This is probably what Ted Rushton, of Orillia, was thinking of when in asking for material he set our minds at rest by making clear that he is only 11 years old and "not a spy or working for Russia or other spys." We think Ted will qualify for the material.

PULLING STRINGS

A recent arrival from the United Kingdom to the staff of the Machine Shop of Avro Canada knows considerable about string musical instruments. Ed. Pullen used to be guitarist with Billy Cotton's orchestra, one of the U.K.'s foremost dance bands. Ed played for Cotton both before and after the war and in addition has made recordings with the late "Fats" Waller, Louis Armstrong and others.

BOUQUETS

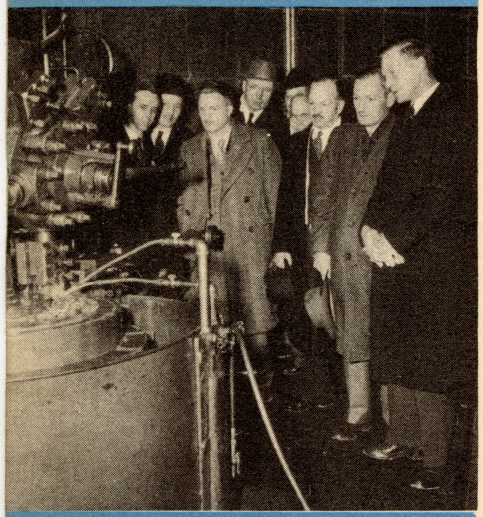
We take off our hats to the man (or woman) who allegedly blacked "Slim" Harper's right eye during Christmas week. Slim, who works in Sales and Service, stands well over six feet and a half and was a noted athlete in his day. We haven't heard the story yet about what really happened. How about it, Slim?

SICK LEAVE

Murray Willer, our editorial director, had to hurriedly go home just before New Year's. When Murray goes home the day the photo release of the CF-100 fighter is breaking and 125 carrier boys are turning the plant upside down he must be sick. The doctor diagnosed his condition as stomache flu and ordered him not to have any rich food or alcoholic drinks over the holiday. As a result he returned to work several pounds lighter while most of us did the opposite.

VISITORS

AVRO CANADA WELCOMES AIR HEADS



DEFENCE CHIEFS INSPECT OUR FACILITIES

YOUTHFUL ADMIRERS OF THE JETLINER

LEADERSHIP TRAINING

Several fellow employees in our plant have helped to form the Weston and District Junior Chamber of Commerce organized by, for and about young men, to train for leadership positions to-morrow. The four main objectives are as follows:

1. To encourage self-development in the way of classes on effective speaking, sales, campaigns, etc.
2. To develop a greater interest in civic affairs, a subject we should all know more about.
3. To stimulate a vigorous Canadian national sentiment.
4. To promote active fellowship in the way of dinners, entertainment, sports, smokers, etc.

Anyone interested should contact:
Gene Farion, A/C Tool Room or
Ken Nolan, A/C Sht. Metal Shop.

COVER GIRL

Beverley Burkhardt, of Tabulating, spent December basking in the Florida sun while the rest of us sloshed around "Muddy Malton." Our scouts tell us that she had a wonderful holiday and that you should see her tan. We remain unconvinced until she provides us with a photograph of herself in a bathing suit with palms in the background. We're looking for that sort of a photograph, you see, for the magazine.

SCENES FROM AVRO Christmas PARTY

DISTRIBUTING THE PRESENTS

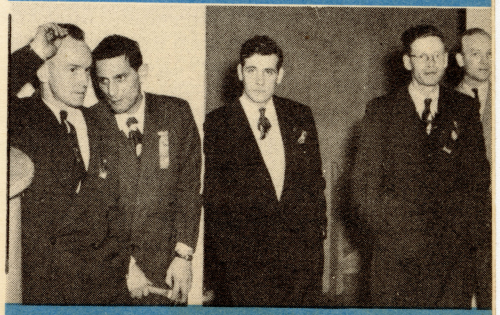
Santa worked overtime making two visits to the Palace Pier this year for the benefit of the younger Avro Canada set. Anyone attending the Christmas party on either night must agree that the Recreation Club Party Committee did a magnificent job in planning and preparing the affair.

The entertainment was exceptionally good and lasted just long enough to keep the children amused until the arrival of Saint Nick.

Prizes were plentiful and apart from the odd one or two youngsters wishing to exchange a hockey stick for a gun every child seemed more than satisfied with what Santa had brought him or her.

It was a good night's full of entertainment with the final count showing 2,400 children receiving gifts. Candy, whistles and balloons were much in evidence and everyone, including parents, went home happy even if tired.

MAN OF THE EVENING

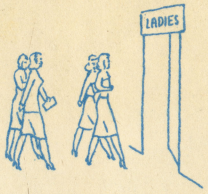


THE MEN BEHIND THE SCENES

VERSE CORNER

FROM THE HUMOROUS.....

LADIES ONLY



We see it every morning.
It happens every day.
A double file of females
Meander on their way.
The thing that puzzles all the men
And gives the boss gray hairs
Is when the girls go to the powder room
They always go in pairs.

Perhaps the trip is long and rough,
The hall is dark and lonely,
But two by two they always go
To the room marked "Ladies Only".
The poor boss stands and tears his hair
He's simply worn with grief,
The day's production goes to hell
While the girls go on relief.

At three o'clock each afternoon,
The march begins once more.
What goes on in that Powder Room
That cannot wait till four?
The only way that I can see
To make production boom
Is to move the whole damn office
Into the "Ladies Room".

ANONYMOUS

TO THE SERIOUS....

WINTER CLOUDS

Fringing the horizon as far distant hills
Then billowing out to soar away on high,
The dark clouds, fan forth their folded frills
To scud tempestuously through a lucent sky.

A waning sun sends streamers through the blue,
And ties each cloud with tapes of silver lace,
It crowns each edge in radiant coppered hue,
As ever on they roll in solar grace.

The sun now lies behind these darkening shrouds,
All gambol held by winds which cease to blow:
And from this mass of heavy sullen clouds
Com.. crystal flakes, to crown the earth with snow.

T. HISCOCK

Ted Colville

At press time Avro Canada's undefeated hockey team is tied for first place with Kodak in the Weston Industrial League. Their present total of ten points is made up of four wins and two ties. The wins were at the expense of Moore's - 9-0, Moffat's 3-0 and 3-2, and C.C.M. 3-1. The ties were both 1-1 affairs played with Kodak and R.C.A.F. Our team is a rugged, hard hitting, fast-skating club with Blake Eatough exceptionally good in goal, Pat Murphy and Roger Feldman steady on defence, and Murray Nielson and Pat Williams fast and aggressive on the forward line. We have a very good team for our initial entry into commercial hockey. One criticism, however, is the rough style of our play. Many fans like to see hockey played with 12 men on the ice, not with 8 and 9 and the rest in the penalty box. As can be seen, this team deserves our support as fans. For tickets 'phone Wilf Faulkingham, Local 139 - Cost .25¢ each.

Any employee with ice skates, shin pads or any other hockey equipment to sell is requested to call Wilf Faulkingham, Local 139 or Ted Colville, Local 222. Some of the players in the hockey house league are eager to obtain this equipment.

The Y.W.C.A. are starting new hobby classes on Wednesday, January 11th. These classes consist of instruction in leathercraft, dramatics, sketching, bridge, etc. and will run for 12 weeks. For further information call Miss Daisy Pon, Local 55.

While the subject of boating may seem a bit unseasonable just now, we all know the old story about the early bird and the worm. So we think this would be a good time to tell you that Bill Hancock (Lofting) and several other members of the Airframe Design Office are anxious to gather in all boat and boating enthusiasts who would be interested in forming an Avro Boating Club. Several trips were organized by Bill last summer and were carried through with great success. Quite a number of the boys have designed and built their own boats; Bill Shaw, who designed his own sailboat, sets up a spirit of friendly competition with (we quote) "the enthusiasts of the noisy, gas-eating, fume-throwing outboards." There's a challenge if ever we saw one. Next spring will roll around in no time at all, and as the boys want to be organized for a real boating summer how about getting in touch with them if you're interested. There's plenty of room on the water for anyone who wants to get wet.

HAWKER, AVRO MANCHESTER, ARMSTRONG WHITWORTH, GLOSTER, ARMSTRONG SIDDELEY, AVRO CANADA.

AVRO MANCHESTER

To aircrew the name of Avro Manchester is normally linked with that of the Lancaster bomber for the two have become almost synonymous. One of the truly great aircraft of the last war, the Lancaster personifies the reputation for reliability which the firm has built up through the years for its products.

This reputation was founded in 1908 when the first full-size British plane to fly bore the name Avro. The tradition has been carried on by such aircraft as the Avro 504 trainer and the Anson - the latter still being produced 17 years after its design. To fill the wartime need for heavy bombers the Lancaster was evolved from the firm's twin-engined Manchester and soon became famous for such exploits as the dam-busting attacks on the Ruhr and the sinking of the Tirpitz. Even today the Lancaster is still in service, having been adapted for navigation training, photographic work and many other uses.

One of the largest of the English aircraft companies and one of the oldest, Avro Manchester has not been content to rest on its laurels. Towards the end of the war the Lincoln was developed to succeed the Lancaster, and more recently the Shackleton, a coastal reconnaissance plane, which is the most powerful aircraft in the R.A.F. today. On the training side there is the Athena, a modern two-place aircraft which stresses accessability and interchangeability of parts and is suitable for either conventional engine or turbo-prop. In civil aviation their Tudor 8, powered by four jet engines, has been developed to explore problems of operation at high altitudes. Rounding out the picture is a central servicing establishment which Avro maintains for carrying out overhauls, Certificates of Airworthiness or minor repairs - day or night.

From small beginnings the Avro organization has grown into one of the world's leading aircraft companies, a position possible only through the loyal teamwork which is essential to success.